

Appendix D: Chisago County Water Plan 2020 – 2030

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Lower St. Croix River Comprehensive Watershed Management Plan

March 2020

CHISAGO COUNTY LOCAL WATER MANAGEMENT PLAN

December 2020-December 2030



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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

INTRODUCTION

Chisago County, located in east central Minnesota, approximately 35 minutes north of the Twin Cities metropolitan area, was established in 1851, seven years before Minnesota became a state. Chisago, the county name, comes from the Chippewa Indian word, Ki-Chi-Saga, which means Fair and Lovely Waters. Chisago County borders the St. Croix River to the east, and shares borders with Pine, Isanti, Anoka, and Washington Counties. The county seat, first at Taylors Falls, moved to Chisago City in 1865 and then to Center City in 1875, where it remains today.

Table 1: Population trends (US Census Bureau)

Year	Population	Percent Increase
1960	13,419	
1970	17,492	30.4
1980	25,717	47.0
1990	30,521	18.7
2000	41,101	34.7
2010	53,887	31.1

The Minnesota Planning State Demographic Center projects that by 2030, the population of Chisago County will be 69,540. This represents a 29% increase over 2010. This will accelerate development pressures.

A great majority of the land in Chisago County remains largely undeveloped, primarily in agricultural use, woodlands, or wetlands. The majority of development in the County has occurred in the southwest, along I-35 on the western side of the county, along Highway 8, and the Northern (Rush City) Lakes area.

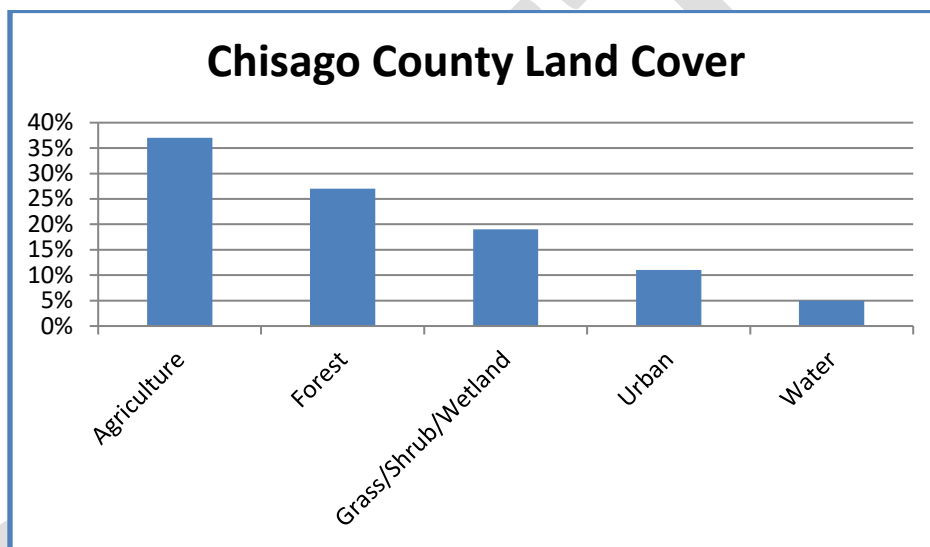
Minnesota Department of Natural Resources (DNR) owned land accounts for a large part of the County; Carlos Avery Wildlife Management Area, Wild River State Park, Interstate Park, and Chengwatana State Forest total over 15,500 acres, or 6%, of the total land area.

Chisago County (University of Minnesota 2000 Chisago County Land Cover and Impervious Surface Area) had the following percentages of land use:

Table 2: Chisago County Land Cover

Chisago County Land Cover	Acres	Percent
Agriculture	105,500	37%
Forest	77,100	27%
Grass/Shrub/Wetland	54,200	19%
Water	14,500	5%
Urban	31,800	11%
Total	283,100	100%

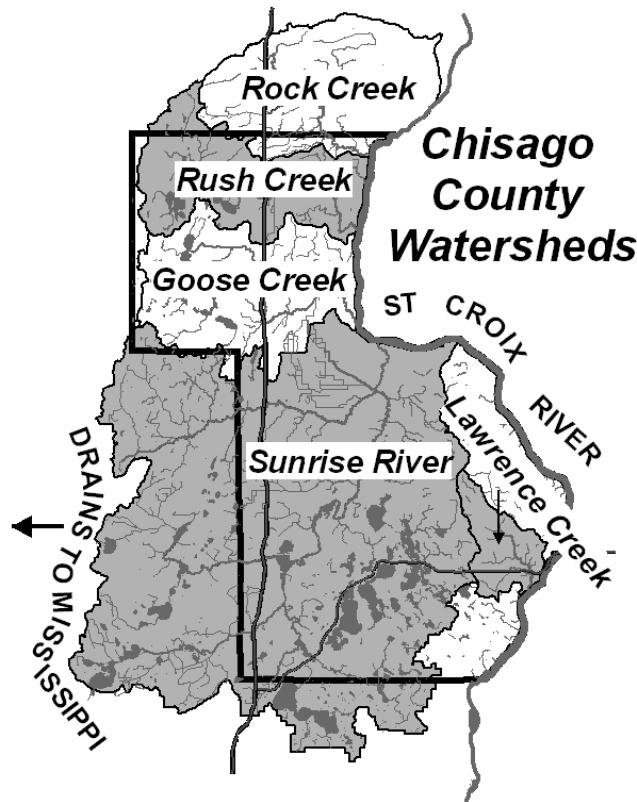
Figure 1: Chisago County Land Cover



Chisago County has abundant water resources. The DNR designates public waters to indicate which lakes, wetlands, and watercourses over which DNR Ecological and Water Resources has regulatory jurisdiction. The statutory definition of public waters includes public waters and public waters wetlands. Public waters are all waterbasins and watercourses that meet criteria set forth in Minnesota Statutes that are identified on Public Water Inventory maps authorized by Minnesota Statutes. Public water wetlands include all type 3, type 4, and type 5 wetlands (as defined in U.S. Fish and Wildlife Service Circular No. 39, 1971 edition) that are 10 acres or more in size in unincorporated areas or 2.5 acres or more in size in incorporated areas. Currently, DNR Waters utilizes scanned mylar county-scale maps printed on paper to show the general location of the public waters and public waters wetlands (lakes, wetlands, and watercourses) under its regulatory jurisdiction. These maps are commonly known as Public Waters Inventory maps. The DNR sets the regulatory “boundary” of these waters and wetlands as the ordinary high water level.

Chisago County is almost entirely in the St. Croix River watershed. Chisago County has been divided into multiple subwatersheds – Rock Creek, Rush Creek, Goose Creek, Sunrise River, Lawrence Creek, and direct drainage.

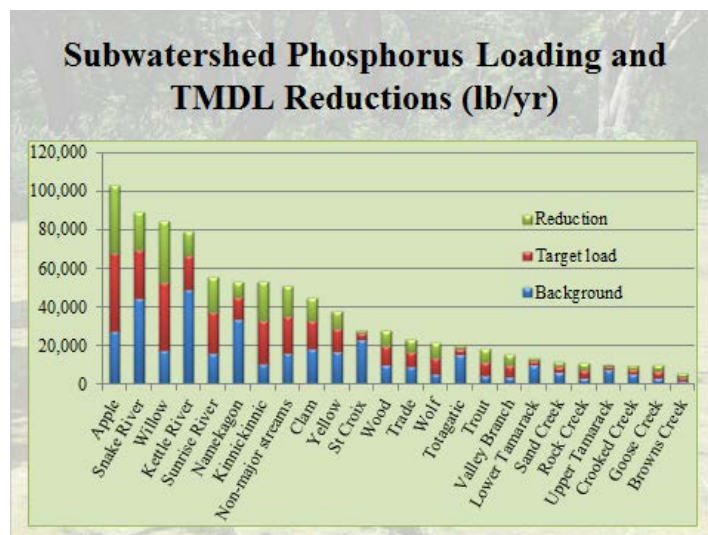
Figure 2: Chisago County Watersheds



Water runoff from Chisago County lands contribute to nutrient and sediment water quality concerns in the St. Croix River. A Total Maximum Daily Load study (TMDL) and Implementation Plan has been completed for Lake St. Croix. The TMDL allows for 46,000 pounds per year of phosphorus to be loaded to the St. Croix River from Chisago County. This requires 21,000 pounds per year of reduction from the estimated TMDL baseline load of 68,200 pounds per year in the early 1900s. Chisago County's required reduction ranks 3rd largest among the 19 counties in the St. Croix basin.

To achieve the St. Croix Basin Partners' goal of 20% reduction of phosphorus by 2020, Chisago County needs to reduce loadings by 16,200 pounds per year. To attain this goal, activities must be implemented that achieve an average annual rate of phosphorus reduction of 500 pounds per year over 30 years, or 1,600 pounds per year over 10 years.

Figure 3: Subwatershed Phosphorus Loading



Quantifying changes in phosphorus loadings to the St. Croix River since the TMDL baseline conditions of the early 1990s is difficult. With respect to agricultural practices, there have been several in Chisago County that have had a significant impact on phosphorus loading. The amount of animal agriculture has decreased dramatically. Farming practices have changed. In the 1990s, it was common to see tillage practices that retained minimal residue on the field after harvest. Since then there have been significant improvements to tillage equipment, herbicides, and seed genetics that have resulted in an increase in residue retained on fields post-harvest, which in turn lessens the amount of phosphorus in runoff.

Chisago County also has implemented a program to eliminate nearly 100% of septic systems characterized as “Imminent Threat to Public Health Septic Systems”. However, many failing systems still exist throughout the county.

The State of Minnesota has passed legislation restricting the use of phosphorus in lawn fertilizer. This legislation has resulted in substantial reductions of phosphorus application to turf grass in Chisago County.

The Sunrise River in east-central Minnesota is a watershed and river system that has many impairments that affect water quality and aquatic biota. While the majority of the watershed is in Chisago County, portions of the watershed are in Isanti, Anoka, and Washington Counties. Within the St. Croix Basin, the Sunrise River (with approximately 5% of the land area) is one of the larger contributors of phosphorus and sediment to the St. Croix River. In fall 2007, a joint multi-agency effort was initiated to perform a detailed watershed study of aquatic resources of the Sunrise River Basin. The primary partners of this study include the US Army Corps of Engineers, Minnesota Pollution Control Agency, and Chisago County.

The objective of the Sunrise River Watershed Study is to prepare a plan for watershed management that provides the technical basis for future management of aquatic resources including wetlands. Key issues the group is evaluating include water quality, nutrient and sediment loading, stream stability and erosion, aquatic habitat conditions, and management of wetland resources. The study includes evaluation of how land use and projected future population growth influences these key resource issues, how future land use might be better managed, and the potential economic cost for such management actions. Water managers will use the results to guide management decisions that will benefit the Sunrise River and the downstream St. Croix River.

BACKGROUND OF THE LOWER ST. CROIX, ONE WATERSHED, ONE PLAN (1W1P) PLANNING PROCESS

Responsible Local Unit of Government

The Chisago County Board of Commissioners adopted Resolution No. 11/1019-1 – **Authorization to revise and update the Chisago County Comprehensive Water Management Plan** on October 19, 2011. This resolution is authorized under Minnesota Statutes, Chapter 103B.301, the Comprehensive Local Water Management Act.

The resolution states that the Chisago County Board of Commissioners delegates to the Chisago County Environmental Services/Zoning Department the responsibility of coordinating, assembling, writing, and implementing the revised local water management plan pursuant to M.S. 103B.301 as implemented through the Water Plan Policy Team (Policy Team).

The Policy Team consists of five citizen members (appointed by the Chisago County Board of Commissioners), one supervisor from the Chisago Soil & Water Conservation District, one County Commissioner, and the Director of Chisago County Zoning/Environmental Services. In addition, the Policy Team is supported by the Technical Advisory Team, which is made up of representatives from Chisago County Public Health, Chisago Lakes Lake Improvement District, Chisago Soil & Water Conservation District, Comfort Lake Forest Lake Watershed District, Minnesota Board of Water & Soil Resources, Minnesota Department of Agriculture, Minnesota Department of Natural Resources, and the Natural Resources Conservation Service.

Water Plan administration and Policy Team coordination is overseen by the Chisago County Water Resource Manager.

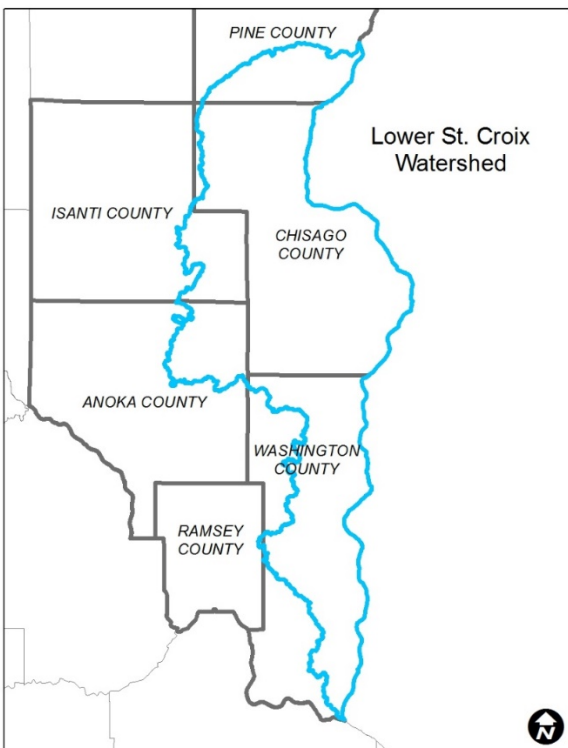
Lower St. Croix, One Watershed, One Plan (1W1P) Implementation Framework

On September 16, 2013, the Chisago County Board of Commissioners approved the Chisago County Local Water Management Plan – September 2013 to September 2023. The Implementation Plan for the Chisago County Local Water Management Plan expired on December 31, 2018, requiring an amendment (or five-year update) of the Goals and Objectives, and Action items of the Chisago County Local Water Management Plan.

On January 18, 2017, the Chisago County Board of Commissioners approved Resolution No. 17/0118-5 to **Support a Lower St. Croix Watershed One Watershed, One Plan (1W1P) Implementation Framework Project**. The resolution states that Chisago County recognizes and supports watershed-scale planning and coordination efforts consistent with Minnesota Statutes, Chapter §103B.801, also known as One Watershed, One Plan.

The adopted resolution further states that Chisago County supports an application by the Washington Conservation District to the Minnesota Board of Water and Soil Resources (BWSR) for a planning grant to develop a coordinated, watershed-scale implementation framework and anticipates entering into a Memorandum of Agreement with the Counties, Soil and Water Conservation Districts, and Watershed Management Organizations within the Lower St. Croix watershed (**Figure 4: Lower St. Croix Watershed Map**) to implement this collaborative effort and be eligible for plan-based implementation funding.

Figure 4: Lower St. Croix Watershed Map



On February 21, 2018, the Chisago County Board of Commissioners approved the Lower St. Croix Watershed Memorandum of Agreement. The Memorandum of Agreement is an agreement of fifteen organizations in the lower St. Croix watershed to collectively develop, adopt, and implement, as local government units, a coordinated watershed management plan.

Minnesota statutes 103F.48 subd 4. requires Soil & Water Conservation Districts, in consultation with local water management authorities, to adopt a summary of “other watercourses” for inclusion into the local water plan. On April 1, 2017, the Chisago Soil & Water Conservation District approved Resolution No. 2017-04-01 Local Water Resources Riparian Protection in Chisago County. If the summary is incorporated into the plan with no other changes, it can be done as an addendum, without the formality of a full plan amendment process.

On June 6, 2018, the Chisago County Board of Commissioners moved to approve the inclusion of Chisago Soil & Water Conservation District Resolution No. 2017-04-01, Local Water Resources Riparian Protection in Chisago County, as an Addendum to the Chisago County Local Water Management Plan 2013-2023 and proceed with notifications to the following agencies including, soil and water conservation districts, Municipalities, towns and townships, Watershed districts, Boards of contiguous counties, joint powers organizations, BWSR regional supervisor, the Minnesota Departments of Natural Resources, Agriculture, Health and the Minnesota Pollution Control Agency.

On February 6, 2019, the Chisago County Board of Commissioners approved Resolution No. 19/0206-3 to **Waive the five-year Amendment Requirement for the Chisago County Comprehensive Local Water Management Plan**, as Chisago County is supporting the transition to the 1W1P for the Lower St. Croix watershed. In March of 2019, Chisago County submitted the approved Resolution No. 19/0206-3 to the Board of Water and Soil Resources and request to waive the required amendment of the Implementation Plan, of the Chisago County Comprehensive Local Water Management Plan, that expired on December 31, 2018.

On October 11, 2019, the Board of Water and Soil Resources approved the Chisago County Comprehensive Local Water Management Plan waiver of the five-year amendment requirement. The order from BWSR states that the 1W1P for the Lower St. Croix Watershed may substitute for the current County Comprehensive Local Water Management Plan when completed and adopted by the Chisago County Board.

Chisago County Local Water Management Staff Participation in the Lower St. Croix, One Watershed, One Plan (1W1P)

Beginning in 2017, the Chisago County Water Resource Manager participated in the Lower St. Croix One Watershed, One Plan planning process to develop a coordinated watershed management plan along with water resources staff from the fifteen collaborating agencies, or Lower St. Croix (LSC) Partners, who signed the Memorandum of Agreement. The Administrator of the Chisago Lakes Lake Improvement District also participated in the planning process.

Participation included actively participating in the 1W1P Steering, Advisory and Policy Committee meetings to identify and prioritize resource areas and issues, consolidating issues that were identified through agency and stakeholder input, developing the desired future conditions for the resource areas, and establishing measurable goals, outputs and priority locations for each of the issues and resource areas.

Chisago County water resources staff also worked with the LSC Partners to develop the implementation actions found in the 2020-2029 Implementation Table (Table 5-1), Table 5-2, and Table 5-3 of the Lower St. Croix River Comprehensive Watershed Management Plan.

Local Water Management Plan Adoption and Updates

First Chisago County Water Plan Adopted – January 19, 1993
First Update 1998 – 2002
Second Update 2006 - 2011
Amendment – August 27, 2009
Amendment 2010 to 2013 – March 4, 2010
Third Update 2013 – 2023
Amendment – May 14, 2018
Waiver of Five-Year Amendment – October 11, 2019

Expiration Date of Current Plan

September 30, 2023

Lower St. Croix, One Watershed, One Plan (1W1P) Local Water Management Plan Adoption and Updates

County Board Approved Resolution to Support 1W1P Implementation Framework -
January 18, 2017
County Board Approved Lower St. Croix Watershed Memorandum of Agreement -
February 21, 2018

PURPOSE OF THE CHISAGO COUNTY LOCAL WATER MANAGEMENT PLAN APPENDIX TO THE LOWER ST. CROIX RIVER COMPREHENSIVE WATERSHED MANAGEMENT PLAN

Purpose

The purpose of the Chisago County Local Water Management Plan Appendix to the Lower St. Croix River Comprehensive Watershed Management Plan is to allow for the inclusion of County watershed priorities that were established in the September 2013 – 2023 Chisago County Local Water Management Plan.

During the 1W1P prioritization process to develop water related measurable goals and strategies, or objectives, some of the current objectives identified in the Chisago County Local Water Management Plan were not included in the final Lower St. Croix River Comprehensive Watershed Management Plan. However, BWSR and the 1W1P planning process allowed Chisago County and other counties to include all objectives absent from the final Lower St. Croix River Comprehensive Watershed Management Plan as an Appendix to the plan.

Chisago County Water Plan Policy Team members and residents have identified watershed priorities to include in the Chisago County Local Water Management Plan Appendix. The County will use the priorities identified in the Appendix to obtain and use resources to protect, improve, and conserve water resources in Chisago County including lakes, rivers, wetlands, and groundwater.

The Chisago County Local Water Management Plan Appendix does not replace, but supplements the Mission, Vision, Resource Areas, Issues, Measurable Goals, Outputs and Priority Locations as established in the Lower St. Croix River Comprehensive Watershed Management Plan.

Chisago County Water Plan Policy Team Review of Goals and Objectives

The majority of the Goals and Objectives that were adopted in the September 2013 – 2023 Chisago County Local Water Management Plan are included in the Measurable Goals, Outputs and Priority Locations as found in the Lower St. Croix River Comprehensive Watershed Management Plan.

However, in the winter of 2019 and 2020, the Chisago County Water Plan Policy Team reviewed the Goals and Objectives in the September 2013 – 2023 Chisago County Local Water Management Plan to identify which Goals and Objectives to include in an Appendix.

Prior to the Water Plan Policy Team meetings, staff from Chisago County, the Chisago Soil and Water Conservation District and the Comfort Lake – Forest Lake Watershed District updated the status of each Objective and made a recommendation to keep the Objective as Written or to either Modify, Change or Delete the Objective. Staff also marked the suggested Priority ranking of each Objective prioritizing each in following the Tier A, B, C ranking as shown in the 1W1P Prioritized Issue Statements identified in the Lower St. Croix River Comprehensive Watershed Management Plan.

Goals and Objectives from the September 2013 – 2023 Chisago County Local Water Management Plan that were not included in the Lower St. Croix River Comprehensive Watershed Management Plan are listed in Goals and Objectives section in this Appendix.

Some Objectives found in this Appendix can also be found in the Lower St. Croix River Comprehensive Watershed Management Plan. These Objectives may be included in the Lower St. Croix River Comprehensive Watershed Management Plan, but have specific notation to Chisago County. These Objectives are identified in the alphabetical list under the Objective along with a brief description of where the related objective can be found in the implementation table (Table 5-1) in the Lower St. Croix River Comprehensive Watershed Management Plan.

At their meeting on February 10, 2020, the Water Plan Policy Team passed a motion approving the draft Appendix.

PRIORITY CONCERNS TO BE ADDRESSED

The following Priority Concerns have been adopted by the Chisago County Water Plan Policy Team, as addressed in the September 2013 – September 2023, Chisago County Local Water Management Plan.

The Priority Concerns of Chisago County water resources have been expressed by residents, Water Plan Policy Team members, and agency input. All comments and descriptions of the concerns have been documented in the Priority Concerns Scoping Document are located in the September 2013 – September 2023, Chisago County Local Water Management Plan.

A Priority Concern is to protect the quality and quantity of groundwater used for drinking water.

A Priority Concern is the introduction or spread of aquatic invasive species and their negative effect on water quality, navigation, recreation, or fisheries.

A Priority Concern is septic systems that are failing, noncompliant, or an Imminent Threat to Public Health.

A Priority Concern is the influence of agricultural, rural, and urban land use practices on water quality.

A Priority Concern is that citizens and elected officials receive accurate and understandable information to make informed decisions.

A Priority Concern is to obtain sufficient resources to achieve goals established in the Water Plan.

SUMMARY OF GOALS AND OBJECTIVES

The table below is a summary of the estimated timeline and potential resources needed to fully implement the Chisago County Local Water Management Plan Appendix. These estimates are for planning purposes only and are not intended to be a commitment by Chisago County or partner resource agencies. Detailed information on specific goals and objectives can be found in the appendix and September 2013 – September 2023, Chisago County Local Water Management Plan.

Table 3: Summary of Goals and Objectives Costs in Dollars

	2021	2022	2023	2024	2025	Totals
Protect Quality & Quantity of Groundwater	35,000	35,000	35,000	35,000	35,000	175,000
Aquatic Invasive Species	75,000	75,000	75,000	75,000	75,000	375,000
Non-compliant Septic Systems	31,000	31,000	16,000	16,000	16,000	110,000
Land Use Practices	1,392,500	1,390,000	1,305,000	1,305,000	1,120,000	6,512,500
Make Informed Decisions	125,000	125,000	105,000	75,000	75,000	505,000
Sufficient Resources	145,000	145,000	140,000	140,000	140,000	710,000
Totals	1,803,500	1,801,000	1,676,000	1,646,000	1,461,000	8,387,500

Figure 4: Summary of Five Year Estimated Cost of Goals and Objectives in Dollars

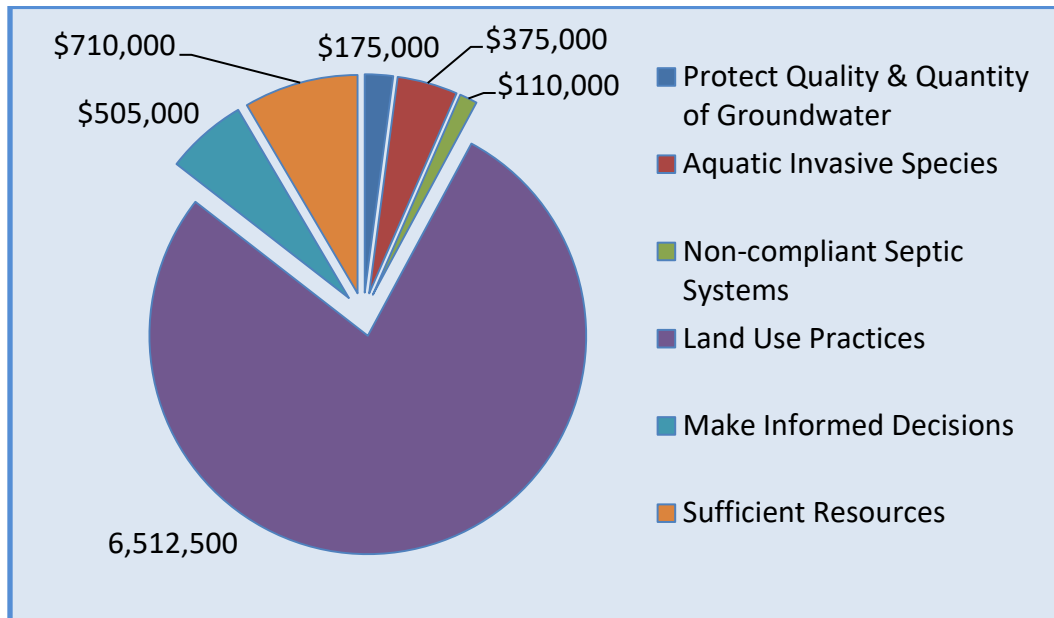
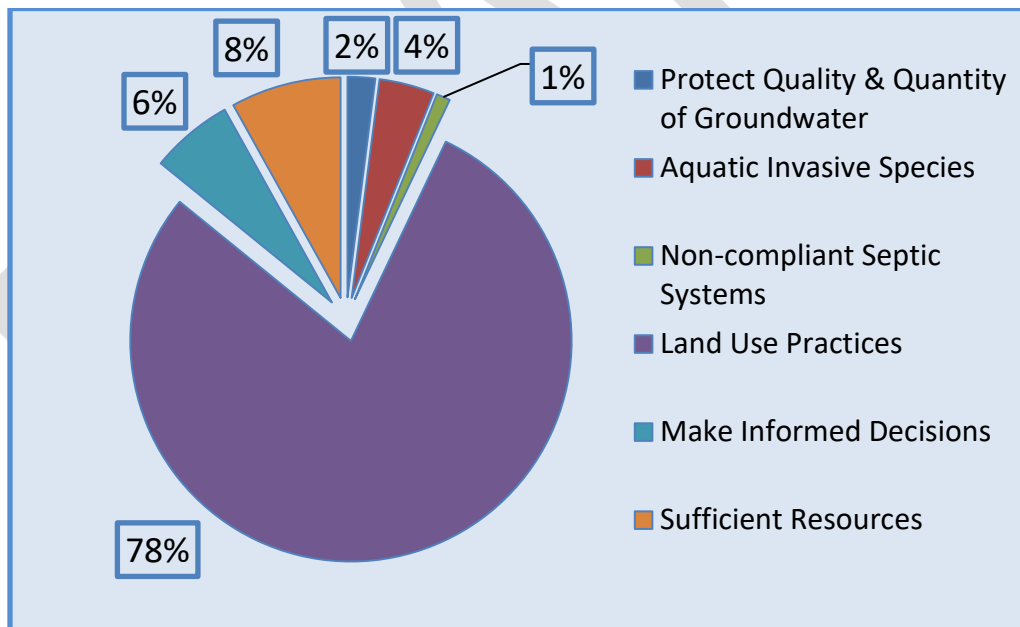


Figure 5: Summary of Five Year Estimated Cost of Goals and Objectives by Percentage



Participants in previous Water Plan activities have been very successful in obtaining state and federal resources for plan implementation. It is anticipated that this success will continue into the future.

CONSISTENCY OF THE PLAN

The Chisago County Local Water Management Plan Appendix is consistent with other pertinent state, county, regional, and other local plans. There are no recommended amendments or potential conflicts with official controls at this time.

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GOALS AND OBJECTIVES

Listed below are the goals and objectives to support the six priority concerns. Each objective includes a brief description of the proposed activity. Included with the description is:

- a. When it is anticipated to be completed
- b. Local unit(s) of government delegated implementation responsibility
- c. Estimated financial and in-kind resources it will take to complete the objective
- d. The watershed or groundwater units benefiting from the objective.
- e. Location of Objective found in the implementation table (5-1) in the Lower St. Croix River Comprehensive Watershed Management Plan

PROTECT QUALITY AND QUANTITY OF GROUNDWATER

A Priority Concern is to protect the quality and quantity of groundwater used for drinking water.

Goals

- Protect groundwater from human caused contamination to meet or exceed applicable drinking water standards.
- Manage groundwater withdrawal to protect and conserve current and future uses including drinking water, recreation, ecological, agriculture, commercial, and industrial uses.

Objectives

1. Support local Wellhead and Source Water Protection activities and provide technical assistance and information as requested.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Minnesota Department of Health, local communities
 - c. \$5,000 per year X 5 years = \$25,000 to support Chisago County staff
 - d. Wellhead Protection Areas
2. Use information in the Chisago County Geologic and Hydrogeologic Atlas in decision making.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Minnesota Geologic Survey
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County groundwater

3. Support improved security of city water supply wells and Wellhead Protection areas.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Minnesota Department of Health, local communities
 - c. \$5,000 per year X 5 years = \$25,000
 - d. Wellhead Protection areas

4. Support protection of water resources by participation in Chisago County Emergency Management Planning.
 - a. 2021-2125
 - b. Chisago County, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County groundwater

5. Promote comprehensive policies to protect ground and surface water from sand and gravel mining and processing, including frac sand mining.
 - a. 2021-2025
 - b. Chisago County
 - c. \$10,000 per year X 5 years = \$50,000
 - d. All Chisago County groundwater

6. Access Minnesota Department of Health Contaminants of Emerging Concern program for support in outreach and education efforts to enhance citizen understanding of their role in protecting groundwater quality including their use and disposal of pharmaceuticals, personal care products, hazardous materials, pesticides, and fertilizers.
 - a. Ongoing program starting in 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. Al Chisago County groundwater

AQUATIC INVASIVE SPECIES

A Priority Concern is the introduction or spread of aquatic invasive species and their negative effect on water quality, navigation, recreation, or fisheries.

Goals

- Monitor aquatic invasive species for current and new infestations.
- Manage aquatic invasive species to maintain water quality, recreation, and fish and wildlife habitat.

Objectives

1. Partner with the Comfort Lake Forest Lake Watershed District, Minnesota Department of Natural Resources, and other agencies to provide watercraft inspections and education on aquatic invasive species at public water accesses throughout the Comfort Lake Forest Lake Watershed District, Chisago Lakes Lake Improvement District, and northern Chisago County.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Comfort Lake Forest Lake Watershed District, Minnesota Department of Natural Resources
 - c. \$50,000 per year X 5 years = \$250,000
 - d. Comfort Lake Forest Lake Watershed District, Chisago Lakes Lake Improvement District, northern Chisago County
 - e. Lakes 2C, Rivers & Streams 2B, St. Croix River & Lake St. Croix 2A, #30 and 31, Page 11 – Implementation Action C
2. Partner with local lake associations to control aquatic invasive species, as identified by the Minnesota Department of Natural Resources for purposes of improved navigation.
 - a. Ongoing program 2021-2025
 - b. Chisago Lakes Lake Improvement District
 - c. \$15,000 per year X 5 years = \$75,000
 - d. Chisago Lakes Chain of Lakes watershed

3. Develop multiple aquatic plant and invasive animal comprehensive surveys, such as Point-Intercept surveys, covering major lakes located within the County and under a five-year rotation.
 - a. Ongoing program starting in 2021-2025
 - b. Chisago Lakes Lake Improvement District, Chisago County
 - c. \$10,000 per year X 5 years = \$50,000
 - d. Chisago Lakes Lake Improvement District, Chisago County

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NONCOMPLIANT SEPTIC SYSTEMS

A Priority Concern is septic systems that are failing, noncompliant, or an imminent threat to public health.

Goals

- Keep 100% of Imminent Threat to Public Health septic systems in compliance with State and County standards.
- Bring 50% of failing septic systems in rural unincorporated areas into compliance.
- Bring 80% of failing septic systems in the shoreland zone into compliance.

Objectives

1. Preserve septic system data by updating septic system index.
 - a. 2021-2022
 - b. Chisago County
 - c. \$15,000 per year X 2 years = \$30,000
 - d. All Chisago County watersheds
2. Support the construction of community wastewater treatment systems in unsewered Rural Village Centers as defined in the Chisago County Comprehensive Plan: Almelund, Sunrise, Palmdale, Rush Point, and Stark. Provide support through staff assistance to communities in researching grant opportunities.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds
3. Partner with local communities in the effort to connect areas of high density, undersized, riparian lots to community wastewater treatment systems. This includes shoreland areas around the Chisago Lakes Chain of Lakes, Goose Lake, Rush Lake, and resorts.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds

4. Promote and encourage participation in the Chisago County/Chisago Lakes Joint Sewage Treatment Commission Holding Tank Waste Receiving Program and encourage expansion of the program so that septage may be accepted. Promote and encourage all municipal sewage treatment facilities to accept individual sewage treatment system sewage.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds

5. Mail approximately 200 Septic System Owners Guides each year to owners of new or newly purchased homes or replacement septic systems.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$1,000 per year X 5 years = \$5,000
 - d. All Chisago County watersheds

LAND USE PRACTICES

A Priority Concern is the influence of agricultural, rural, and urban land use practices on water quality.

Goals

- Reduce phosphorus loading from Chisago County to the St. Croix River to help meet 20% basin wide reduction goal.
- Protect surface water from human caused contamination to meet or exceed applicable water quality and environmental standards by implementing local water management plans.

Objectives

St. Croix Basin

1. Complete whole farm management plans for local agricultural producers to identify best management practice locations to reduce nutrient loading to surface waters. Complete 2 whole farm management plans per year.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District, Natural Resources Conservation Service
 - c. \$10,000 per year X 5 years = \$50,000
2. Implement projects identified in the St. Croix River Escarpment Inventory to stabilize erosion concerns and improve water quality. Assist in stabilization of 2 gullies per year.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District, Natural Resources Conservation Service
 - c. \$30,000 per year X 5 years = \$150,000
 - e. Rivers & Streams 1A, St. Croix River & Lake St. Croix 1A, 1B, 1C and 1D, # 2, 14, 25, 26 and 57

Sunrise River Watershed

4. Implement projects recommended in the US Army Corps of Engineers Sunrise River Watershed Study, including the drained wetlands inventory and Soil and Water Assessment Tool model, and strategies for water quality, wetland and aquatic ecosystem management, restoration, and protection, including wetland restoration to provide wildlife habitat, flood storage and infiltration areas for runoff.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. No estimate at this time
 - e. Wetlands 1A, 1B and 2B, #6, 22, and 27, Page 10 – Implementation Action A

Chisago Lakes Chain of Lakes Watershed

5. Implement projects that will help meet the goals of the Chisago Lakes Chain of Lakes Watershed Restoration and Protection Plan (TMDL) or those identified in completed subwatershed assessments. Actively market local/state/federal conservation programs that provide incentives to landowners to install 40 best management practices per year to improve overall water quality within the watershed.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District, Natural Resources Conservation Service, Chisago County
 - c. \$300,000 per year X 5 years = \$1,500,000
 - e. Lakes 1B and 2B, #3, 15, and 21, Page 7 – Implementation Action A

Comfort Lake Forest Lake Watershed District

6. Implement projects that will help meet the goals of the District's Capital Improvement Program (2011).
 - a. Ongoing program 2021-2025
 - b. Comfort Lake Forest Lake Watershed District
 - c. \$100,000 per year X 5 years = \$500,000
7. Implement projects using the District's Residential, Agricultural, and Urban Stormwater Retrofit programs to help with achieving the in-lake water quality goals established in the Comfort Lake Forest Lake Watershed District Watershed Management Plan.
 - a. Ongoing program 2021-2025
 - b. Comfort Lake Forest Lake Watershed District

- c. \$50,000 per year X 5 years = \$250,000
8. Support development of a Sunrise River Regional Stormwater Management Facility downstream of the City of Forest Lake to help correct problems related to excess nutrient and sediment loads to the Sunrise River and Comfort Lake.
 - a. Ongoing program 2021-2025
 - b. Comfort Lake Forest Lake Watershed District
 - c. \$500,000 per year X 5 years = \$2,500,000
 9. Implement projects that will help meet the goals of the City of Wyoming Surface Water Management Plan
 - a. Ongoing program upon plan approval 2021-2024
 - b. City of Wyoming
 - c. \$10,000 per year X 4 years = \$40,000

North Branch Sunrise River Watershed

10. Implement projects that will help meet goals of the North Branch Sunrise River Total Maximum Daily Load Implementation Plan or are identified in completed subwatershed assessments. Actively market local/state/federal conservation programs that provide incentives to landowners to install 10 best management practices per year to improve overall water quality within the watershed. Conduct citizen informational meetings.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Chisago Soil and Water Conservation District, Natural Resources Conservation Service
 - c. \$75,000 per year X 5 years = \$375,000
 - d. Rivers & Streams 1A, St. Croix River & Lake St. Croix 1B, 1C and 1D, #2, 14, and 54, Page 4 and 7 – Implementation Action A

Rock Creek, Rush Creek, Goose Creek Watersheds

11. Implement projects that will help meet the goals of the Rock, Rush, Goose Creeks Watershed Restoration and Protection Strategies or are identified in completed subwatershed assessments. Actively market local/state/federal conservation programs that provide incentives to landowners to install 20 best management practices per year to improve overall water quality within the watersheds.
 - a. 2021-2025

- b. Chisago Soil and Water Conservation District, Natural Resources Conservation Service, Chisago County
- c. \$150,000 per year X 4 years = \$600,000
- e. Rivers & Streams 1A, St. Croix River & Lake St. Croix 1B, 1C and 1D, #2, 14, and 54, Page 4 and 7 – Implementation Action A

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Agriculture

12. Assist livestock operators with proper management of manure, wastewater, and contaminated runoff. Prioritization will be to areas with direct discharge to waters of the state. Priority conservation practices include: manure storage facilities, grass filter strips, manure management plans, clean water diversions, and closure of waste storage facilities.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District, Natural Resources Conservation Service
 - c. \$5,000 per year X 5 years = \$25,000
 - e. Groundwater 1A, Lakes 1A, Page 4 - Implementation Action A

Rural

13. Implement projects that will help meet water quality goals of the Chisago County Comprehensive Parks and Trails Plan and other public lands. County parks include: Dennis Frandsen, Fish Lake, Checkerboard, Kost Dam, Ki-Chi-Saga, Sunrise Prairie Trail, and North Sunrise Park Reserve.
 - a. Ongoing program: 2021-2025
 - b. Chisago County Environmental Services, Parks Division
 - c. 20,000 per year X 5 years = \$100,000
14. Develop a plan to remove excess sediment in the shoreland area of Dennis Frandsen Park. Complete appropriate studies, which may include an Environmental Assessment Worksheet, and obtain necessary permits.
 - a. 2021-2022
 - b. Chisago County Environmental Services, Parks Division
 - c. \$10,000 per year X 2 years = \$20,000
15. Implement the plan to remove excess sediment in the shoreland area of Dennis Frandsen Park. Plan may include application of sediment to nearby farmland.
 - a. 2021-2022
 - b. Chisago County Environmental Services, Parks Division
 - c. \$30,000 per year X 2 years = \$60,000

16. Review historic aerial photographs to determine locations of abandoned or converted feedlots adjacent to public waters to identify potential remnant pollutant loading sources.
 - a. 2021
 - b. Chisago Soil and Water Conservation District
 - c. \$2,500

17. Develop a pilot conservation payment initiative at a watershed level that provides agricultural producers an annual payment based on the level of conservation performances implemented throughout the farm
 - a. 2021-2024
 - b. Chisago Soil and Water Conservation District
 - c. \$25,000 per year X 4 years = \$100,000

Urban

18. Assist local communities with the incorporation and installation of stormwater Best Management Practices to reduce nutrient and sediment loading during reconstruction of local road projects, especially areas with direct discharge of untreated stormwater to public waters. Examples include, but are not limited to: North Branch Maple Street, and City of Lindstrom streets that dead end at a lake.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District, Chisago Lakes Lake Improvement District
 - c. \$10,000 per year X 5 years = \$50,000
 - e. Groundwater 2B, Lakes 1B, # 2, 3, 14 and 15, Page 7 and 10 – Implementation Action A, B and C

19. Inspect and assess construction sites before and during construction to ensure that conditions placed upon plats are fulfilled, especially those relating to erosion control, stormwater protection, and wetland compliance. The inspection includes a summary of the soil, water, and vegetative resources, a summary of resource degradation potential, and recommendations on the preservation, enhancement, and protection of the resources.
 - a. Ongoing program 2021-2025
 - b. Chisago Soil and Water Conservation District
 - c. \$15,000 per year X 5 years = \$75,000
 - e. Groundwater 2B, Lakes 1B, 2A and 2B, Wetlands 1A and 1B, Page 7 – Implementation Action C

20. Update the Chisago County Subdivision Ordinance to include standards that will improve water quality of surface water runoff.
 - a. 2021-2022
 - b. Chisago County, Chisago County Planning Commission
 - c. \$20,000 X 2 years = \$40,000

Wetlands

21. Compile and manage a computerized inventory of all Wetland Conservation Act replacement plans, wetland banks, no net loss determinations, and delineations.
 - a. 2021-2023
 - b. Chisago County
 - c. \$15,000 per year X 2 years = \$30,000
 - d. All Chisago County watersheds
 - e. Wetlands 3A, 3B, and 3E, #29 and 66

Shorelands

22. Update the Chisago County Shoreland Ordinance to be consistent with the revised State of Minnesota Shoreland Ordinance.
 - a. On hold until State of Minnesota Shoreland Ordinance is adopted.
 - b. Chisago County, Chisago County Planning Commission
 - c. No estimate at this time
 - d. All Chisago County watersheds
23. Inventory all General Development and Recreational Lakes in the County to determine the percentage of shoreline that has been converted from natural vegetation to maintained yard. Use this inventory to educate and promote landowners to install Best Management Practices that will help capture and treat the runoff from their property before entering their lake.
 - a. 2021-2022
 - b. Chisago Soil and Water Conservation District
 - c. \$10,000 per year X 2 years = \$20,000
 - d. All Chisago County watersheds
 - e. Lakes 2B, Uplands 2A, #2, 15, and 21

Drainage Ditches

24. Maximize the efficiency of the use of road maintenance products while protecting public safety and minimizing harmful effects on water quality. Support and/or conduct annual road and sidewalk salt management training. Attendees may include local units of government, private applicators, and local businesses.
 - a. Ongoing program 2021-2025
 - b. Chisago County Public Works Department
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds
 - e. St. Croix River & Lake St. Croix 1D, #16, Page 7 – Implementation Action A

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MAKE INFORMED DECISIONS

A Priority Concern is that citizens and elected officials receive accurate, understandable information to make informed decisions.

Goals

- Develop a civic engagement strategy.
- Provide high quality information to citizens and decision makers.
- Maintain a high quality monitoring and assessment program.

Objectives

Education and Outreach

1. Host the countywide Chisago Children's Water Festival on an annual basis. Invite all Chisago County fifth grade students and teachers to the one day event. Provide youth and classroom teachers with an innovative, quality, hands-on learning opportunity highlighting the relationship and interdependence of water to all living things.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Chisago Soil and Water Conservation District
 - c. \$10,000 per year X 5 years = \$50,000
 - d. All Chisago County watersheds
2. Develop a civic engagement strategy for County water resource management.
 - a. 2021-2022
 - b. Chisago County
 - c. \$10,000 per year X 2 years = \$20,000
 - d. All Chisago County watersheds
3. Establish and maintain county-wide Hook, Line and Sinker recycling program.
 - a. Ongoing program 2021-2025
 - b. Chisago County, Chisago Lakes Lake Improvement District
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds

4. Provide opportunities to municipal officials, planning commissions, and the agricultural community to receive education on how their land use decisions have a direct impact on non-point source runoff pollution. Principles outlined in the University of Minnesota Non Point Education for Municipal Officials (NEMO) program will be implemented.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds

5. Provide information and education to Chisago County citizens using the Environmental Connections Newsletter. Publish newsletters twice yearly.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$20,000 per year X 5 years = \$100,000
 - d. All Chisago County watersheds

Monitoring and Assessment

6. Develop a County wide annual water quality monitoring plan for nutrients, aquatic life, and other parameters to determine ambient water quality concentration trends and loading for all public waters in Chisago County, including lakes with public accesses and the main stems and selected tributaries of Rock Creek, Rush Creek, Goose Creek, Sunrise River, and Lawrence Creek.
 - a. 2021-2022
 - b. Chisago County
 - c. \$10,000 per year X 2 years = \$20,000
 - d. All Chisago County watersheds
 - e. Lakes 4A, #49

7. Implement a County wide lake water quality monitoring plan.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$10,000 per year X 5 years = \$50,000
 - d. All Chisago County watersheds
 - e. Lakes 4A, #49

8. Implement County wide river and stream water quality monitoring plan.
 - a. Ongoing program starting in 2021-2023
 - b. Chisago County, Chisago Soil and Water Conservation District
 - c. \$30,000 per year X 3 years = \$90,000
 - d. All Chisago County watersheds
 - e. St. Croix River & Lake St. Croix 4A and 4C, #55

9. Develop an annual water quality monitoring report for Chisago County describing the water resources that were monitored and what parameters they were monitored for. The annual report will provide a complete summary of the monitoring results.
 - a. Ongoing program starting in 2021-2025
 - b. Chisago County, Chisago Soil and Water Conservation District
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds
 - e. Lakes 4A, #49

10. Participate in volunteer programs such as the Minnesota Pollution Control Agency Citizen Lake and Stream Monitoring, Surface Water Assessment, or Citizen Lake Monitoring Plus.
 - a. Ongoing program 2021-2025
 - b. Minnesota Pollution Control Agency
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds
 - e. Lakes 4A, #49

Lake and River Associations

11. Assist local lake and river associations, lake improvement districts, and lake management planning. Provide liaison and technical assistance, help facilitate grant resources for water quality improvement projects, and continue to work with existing lake and river associations.
 - a. Ongoing program 2021-2025
 - b. Chisago County
Supporting agencies: Local lake and river associations, Chisago Soil and Water Conservation District
 - c. \$10,000 per year X 5 years = \$50,000
 - d. All Chisago County watersheds

12. Strengthen and support existing and help form new lake and river associations in Chisago County.

- a. Ongoing program 2021-2025
- b. Chisago County
- c. \$5,000 per year X 5 years = \$25,000
- d. All Chisago County watersheds

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SUFFICIENT RESOURCES

A Priority Concern is to obtain sufficient resources to achieve goals established in the Water Plan.

Goals

- Sufficiently fund Water Plan activities.
- Maintain sufficient staff in place to implement Water Plan activities.
- Maintain active participation of government, volunteer organizations, and citizens in Water Plan activities.

Objectives

1. Administer and coordinate the Chisago County Local Water Management Plan Appendix to the Lower St. Croix Comprehensive Watershed Management Plan.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$80,000 per year X 5 years = \$400,000
 - d. All Chisago County watersheds
2. Administer and coordinate the Chisago Lakes Lake Improvement District Water Resources Management Plan.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$50,000 per year X 5 years = \$250,000
 - d. All Chisago County watersheds
3. Explore the feasibility of formation of additional lake improvement districts, watershed management organizations, or watershed districts in Chisago County.
 - a. 2021-2022
 - b. Chisago County
 - c. \$5,000 per year X 2 years = \$10,000
 - d. All Chisago County watersheds
4. Provide technical and administrative support to the St. Croix Basin Water Resources Planning Team.
 - a. Ongoing program 2021-2025
 - b. Chisago County
 - c. \$5,000 per year X 5 years = \$25,000
 - d. St. Croix River Basin

5. Pursue additional partnership and funding opportunities. Actively pursue local, state, and federal grants
 - a. Ongoing program 2021-2025
 - b. Chisago County, Chisago Soil and Water Conservation District
 - c. \$5,000 per year X 5 years = \$25,000
 - d. All Chisago County watersheds

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APPENDIX

IMPLEMENTATION SCHEDULE

PRIORITY CONCERNS SCOPING DOCUMENT

**CHISAGO SOIL AND WATER CONSERVATION DISTRICT RESOLUTION NO.
2017-04-01 LOCAL WATER RESOURCES RIPARIAN PROTECTION IN
CHISAGO COUNTY**

**CHISAGO COUNTY LOCAL WATER MANAGEMENT PLAN, AUGUST 15, 2013
– AMENDED JUNE 2018**

**ONE WATERSHED, ONE PLAN (1W1P) – LOWER ST. CROIX WATERSHED
FACTSHEET**